

**Claims**

5 1. A shoulder joint prosthesis comprising two cooperating bearing bodies (11), a shaft (13) and a coupling (15) for the connection of the shaft (13) to one of the bearing bodies (11),  
wherein a support member (21) adjoins the lower side (19) of the bearing body (11) connectable to the shaft (13), an outer support surface (23) of said support member (21) at least partly filling a gap present between the bearing body (11) and the shaft (13) in the state connected to the shaft (13) such that the growing together of bone fragments is promoted.

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15 2. A shoulder joint prosthesis in accordance with claim 1, characterized in that the coupling for the connection to the shaft (13) includes a clamping section (15) with which a firm clamping seat of the coupling (15) in the shaft (13) can be established by introduction into a coupling mount of the shaft (13), in particular a clamping seat which can be released again.

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25 3. A shoulder joint prosthesis in accordance with claim 2, characterized in that the clamping section (15) tapers like a cone and can be introduced into a correspondingly shaped counter shape of the shaft (13) as a coupling mount.

4. A shoulder joint prosthesis in accordance with claim 2, characterized in that the clamping section (15) forms a shape matched con-

nection with the counter shape which is rotationally fixed with respect to a longitudinal axis and is wedged by its conical shape in the state connected to the shaft (13).

- 5 5. A shoulder joint prosthesis in accordance with claim 2, characterized in that the clamping section (15) has a cross-section deviating from a circular shape.
- 10 6. A shoulder joint prosthesis in accordance with claim 2, characterized in that the clamping section (15) has an elliptical cross-section.
- 15 7. A shoulder joint prosthesis in accordance with claim 6, characterized in that the elliptical cross-section of the clamping section (15) and of the counter shape of the shaft (13) is aligned in its plane such that the major axis of the ellipse appears as a perpendicular in a projection toward lateral.
- 20 8. A shoulder joint prosthesis in accordance with claim 6, characterized in that the shaft (13) has, in the plane of the elliptical cross-section, the outline of a rectangle provided with rounded corners whose long sides extend parallel to the major axis of the ellipse.
- 25 9. A shoulder joint prosthesis in accordance with claim 1, characterized in that the support surface (23) of the support member (21) is at least regionally convex.
10. A shoulder joint prosthesis in accordance with claim 1, characterized in that the jacket surface of the shaft (13) and the support sur-

face (23) of the support member (21) together form an at least substantially closed surface which adjoins the lower side (19) of the bearing body (11).

- 5 11. A shoulder joint prosthesis in accordance with claim 1, characterized in that the support surface (23) of the support member (21) at least approximately tangentially adjoins the jacket surface of the shaft (13).
- 10 12. A shoulder joint prosthesis in accordance with claim 1, characterized in that the support surface (23) of the support member (21) is structured.
13. A shoulder joint prosthesis in accordance with claim 1, characterized in that the support surface (23) of the support member (21) is made free of apertures.
- 15 14. A shoulder joint prosthesis in accordance with claim 1, characterized in that the support member (21) is replaceably connected to the bearing body (11).
- 20 15. A shoulder joint prosthesis in accordance with claim 1, characterized in that, when the bearing body (11) is connected to the shaft (13), at least one recess (31) is present between the shaft (13) and the support member (21) at which a tool can be positioned to release the bearing body (11) from the shaft (13).

16. A shoulder joint prosthesis in accordance with claim 1, characterized in that the shaft (13) is provided with a support element (27), in particular of basket-like or quiver-like shape, which is mounted laterally at the shaft (13) and whose outer side forms the jacket surface of the shaft (13) merging into the support surface (23) of the support member (21) in the region of the transition from the shaft (13) into the support member (21).  
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17. A shoulder joint prosthesis in accordance with claim 16, characterized in that the support element (27) is fixedly connected to the shaft (13) and is in particular welded to the shaft.  
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18. A shoulder joint prosthesis in accordance with claim 16, characterized in that the support element (27) is made in one piece with the shaft (13).  
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19. A shoulder joint prosthesis in accordance with claim 16, characterized in that the support element (27) is provided with apertures (29).  
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20. A shoulder joint prosthesis in accordance with claim 19, characterized in that the proportion of the sections of the outer surface of the support element (27) interrupted due to the apertures (29) lies in the range from 35% to 45% along a peripheral line (141) of the support element (27) which lies in the implanted state in a plane extending perpendicular to the shaft axis (143) and, in the proximal direction, at a spacing of 8 mm from the point of intersection (145) between the shaft axis (143) and the head axis or shell axis (147).  
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21. A shoulder joint prosthesis in accordance with claim 16, characterized in that, with respect to the orientation of the support element (27) in the implanted state with the shaft axis (143) extending perpendicular to the transverse plane, the ratio X/Y of the maximum outer diameter of the support element (27) in the sagittal direction X and the maximum outer diameter of the support element (27) in the transverse direction Y lies in the range from 0.85 to 0.95.

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